

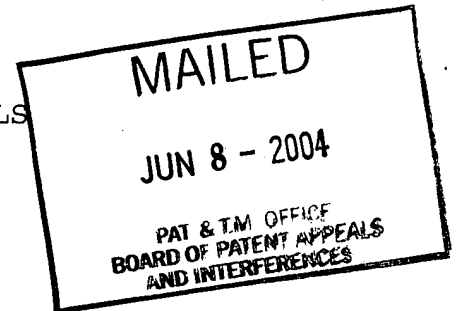
The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ALAN H. GREENAWAY
and PAUL M. BLANCHARD



Appeal No. 2004-0196
Application 09/622,405

HEARD: MAY 20, 2004

Before JERRY SMITH, BARRY, and SAADAT, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-8, 10-18, 20 and 21. Claims 9 and 19 were indicated to contain allowable subject matter by the examiner. The rejection of claims 5, 13 and 14 is not being appealed by appellants [brief, page 1]. Accordingly,

this appeal is directed to the rejection of claims 1-4, 6-8, 10-12, 15-18, 20 and 21.

The disclosed invention pertains to an apparatus for producing simultaneously a plurality of spatially separated images from a plurality of object planes. A particular feature of the invention is that it uses a diffraction grating which is distorted according to a quadratic equation so as to cause the images to be formed under various focus conditions from a plurality of different object planes and the images are spatially separated in a direction having a non-zero component perpendicular to the optical axis.

Representative claim 1 is reproduced as follows:

1. An apparatus for producing simultaneously a plurality of spatially separated images from a plurality of object planes, said apparatus comprising:

an optical system arranged to produce an image associated with a first focus condition;

a diffraction grating arranged to produce, in concert with the optical system, images associated with each diffraction order; and

means for detecting the images, wherein the optical system, diffraction grating and detecting means are located on an optical axis and the diffraction grating is located in a suitable grating plane and the diffraction grating is distorted according to a quadratic function so as to cause the images to be formed under various focus conditions from a plurality of different object planes and said images spatially separated in a direction having a non-zero component perpendicular to the optical axis.

Appeal No. 2004-0196
Application 09/622,405

The examiner relies on the following references:

Torok	3,861,784	Jan. 21, 1975
Kubo	5,684,762	Nov. 04, 1997
Lee	5,721,629	Feb. 24, 1998
Shimano et al. (Shimano)	5,930,220	July 27, 1999

The following rejections are on appeal before us:

1. Claims 1, 4, 7, 8, 11, 12, 15-18, 20 and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Kubo in view of Shimano.

2. Claims 2, 3 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Kubo in view of Shimano and further in view of Lee.

3. Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Kubo in view of Shimano and further in view of Torok.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into

Appeal No. 2004-0196
Application 09/622,405

consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in the claims on appeal. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044,

Appeal No. 2004-0196
Application 09/622,405

1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness.

Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered and are deemed to be waived by appellants [see 37 CFR § 1.192(a)].

We consider first the rejection of claims 1, 4, 7, 8, 11, 12, 15-18, 20 and 21 as being unpatentable over the teachings of

Kubo in view of Shimano. These claims stand or fall together as a single group [brief, page 4], and we will consider independent claim 1 as the representative claim for the group. With respect to representative claim 1, the examiner essentially finds that Kubo teaches every feature of the claimed invention except that Kubo does not teach that the apparatus produces the plurality of spatially separated images from a plurality of different object planes as claimed. The examiner cites Shimano as teaching a device that produces a plurality of spatially separated images in a common image plane from a plurality of object planes. The examiner finds that it would have been obvious to the artisan to utilize the elements of Shimano in the device of Kubo in order to read information from different object fields corresponding to different optical recording media [answer, pages 3-6].

Appellants argue that neither the diffraction grating of Kubo nor the diffraction grating of Shimano meets the limitations of the diffraction grating recited in claim 1. Appellants also argue that the examiner has provided no motivation from the applied references for combining the teachings of Kubo and Shimano. Appellants note that there is no disclosure within Shimano that the same result could be achieved with a diffraction grating as recited in claim 1. Finally, appellants argue that

the teachings of Kubo and Shimano would actually lead the skilled artisan away from the claimed invention [brief, pages 8-16].

With respect to the first argument, the examiner responds that appellants have improperly attacked the applied references individually when they have been used in combination. The examiner emphasizes that Kubo teaches everything but the plural object planes while Shimano teaches the plural object planes. The examiner disagrees with appellants' argument that there is no motivation for combining the teachings of Kubo and Shimano. With respect to appellants' final argument, the examiner responds that appellants have not presented any arguments as to why the proposed combination would render the prior art unsatisfactory for its intended purpose or change the principle of operation of the references [answer, pages 8-14].

Appellants respond that neither Kubo nor Shimano teaches the diffraction grating of claim 1 so that the combination also does not teach the diffraction grating of claim 1. Appellants also assert that neither reference is directed to the problem of imaging a three-dimensional object or something from a plurality of objects planes. Appellants argue that there is no evidence on this record which would render the examiner's proposed combination obvious. Finally, appellants respond that there is

no burden on them to present arguments as to why the proposed combination would render the prior art unsatisfactory for its intended purpose or change the principle of operation of the references [reply brief].

We will not sustain the examiner's rejection of representative claim 1 for essentially the reasons argued by appellants in the briefs. Although the examiner proposes to utilize the elements of Shimano in the apparatus of Kubo, the examiner has not explained exactly what the proposed combination would look like. In other words, it is not clear if the examiner proposes to replace the diffraction grating of Kubo with the optical elements of Shimano or to add the optical elements of Shimano to the diffraction grating of Kubo in Kubo's apparatus. In the first scenario, the resulting diffraction grating of the combination would not present the properties of the diffraction grating of claim 1. In the second scenario, there would be two diffraction gratings which in combination perform the claimed function, but there would be no single diffraction grating having the properties recited in claim 1. Thus, we agree with appellants that even if the teachings of Kubo and Shimano are combined, there is still no single diffraction grating which has the properties recited in claim 1.

Appeal No. 2004-0196
Application 09/622,405

We also agree with appellants that the examiner has not provided sufficient motivation from the references themselves to combine the teachings of Kubo and Shimano. Even though the two references come from the art of forming images from one or more object planes, there is no suggestion in either reference that combining the respective teachings has any desirable result. Since it appears that Shimano can already generate images from a plurality of different object planes, we can find no reason to combine Shimano with Kubo except in an improper attempt to reconstruct the claimed invention in hindsight.

For the reasons discussed above, we do not sustain the examiner's rejection of independent claims 1 and 15 or of any of the other claims rejected on Kubo and Shimano only. With respect to the claims rejected on the additional teachings of Lee or Torok, we do not sustain the rejection of these claims either since neither Lee nor Torok overcomes the deficiencies of the basic combination discussed above.

Appeal No. 2004-0196
Application 09/622,405

In summary, we have not sustained the examiner's rejections with respect to any of the claims on appeal. Therefore, the decision of the examiner rejecting claims 1-4, 6-8, 10-12, 15-18, 20 and 21 is reversed.

REVERSED

Jerry Smith
JERRY SMITH

JERRY SMITH
Administrative Patent Judge

LANCE LEONARD BARRY
Administrative Patent Judge

BOARD OF PATENT
APPEALS AND
INTERFERENCES

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Appeal No. 2004-0196
Application 09/622,405

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